

What is claimed is:

1. A downhole force generator adapted to be moved to a target location within a wellbore for interaction with a well tool previously positioned in the wellbore, the downhole force generator comprising:

 a downhole power unit having a moveable shaft;
 an anchor operably associated with the downhole power unit, the anchor operable between a running configuration and an anchoring configuration wherein the anchor longitudinally secures the downhole force generator within the wellbore; and

 an operating tool operably associated with the downhole power unit and operably engageable with the well tool such that when the operating tool is operably engaged with the well tool and the anchor is in the anchoring configuration, movement of the moveable shaft will transmit a force to the well tool.

2. The downhole force generator as recited in claim 1 wherein the downhole power unit further comprises a self-contained power source for providing electrical power.

3. The downhole force generator as recited in claim 1 wherein the downhole power unit further comprises:

an electric motor including a rotor; and
a jackscrew assembly including a rotational member connected to the rotor, the rotational member operably associated with the moveable shaft to impart motion thereto.

4. The downhole force generator as recited in claim 1 wherein the downhole power unit further comprises a controller that controls the operation of the moveable shaft.

5. The downhole force generator as recited in claim 1 wherein the running configuration of the anchor is a radially contracted configuration, wherein the anchoring configuration of the anchor is a radially expanded configuration and wherein the anchor is operated therebetween in response to movement of the moveable shaft.

6. The downhole force generator as recited in claim 1 wherein the moveable shaft of the downhole power unit is longitudinally moveable such that the downhole force generator generates a longitudinal force on the well tool.

7. The downhole force generator as recited in claim 1 wherein the moveable shaft of the downhole power unit is rotatably moveable such that the downhole force generator generates a rotary force on the well tool.

8. The downhole force generator as recited in claim 1 wherein the anchor further comprises slips that mechanically engage the wellbore in the radially expanded configuration of the anchor.

9. The downhole force generator as recited in claim 1 wherein the anchor further comprises a packing assembly that substantially sealingly engages the wellbore in the radially expanded configuration of the anchor.

10. The downhole force generator as recited in claim
1 wherein the anchor further comprises a spring assembly
that stores energy when the anchor is in the radially
expanded configuration.

11. The downhole force generator as recited in claim
1 wherein the moveable shaft of the downhole power unit
extends through a longitudinal bore of the anchor to the
operating tool.

12. The downhole force generator as recited in claim
1 wherein the operating tool further comprises a shifting
tool for actuating the well tool from one operational state
to another operational state.

13. The downhole force generator as recited in claim
1 wherein the operating tool further comprises a pulling
tool for dislodging the well tool.

14. The downhole force generator as recited in claim
13 wherein the pulling tool further comprises a latching
assembly that engages the well tool.

15. The downhole force generator as recited in claim
13 wherein the pulling tool further comprises a fishing
nose that engages a fishing neck of the well tool.

16. A fishing tool adapted to be moved to a target location within a wellbore for dislodging a well tool previously positioned in the wellbore, the fishing tool comprising:

a downhole power unit having a moveable shaft;
an anchor operably associated with the downhole power unit, the anchor operable between a running configuration and an anchoring configuration wherein the anchor longitudinally secures the downhole force generator within the wellbore; and

a pulling tool operably associated with the downhole power unit and operably engageable with the well tool such that when the pulling tool is operably engaged with the well tool and the anchor is in the anchoring configuration, movement of the moveable shaft will transmit a force to dislodge the well tool.

17. The fishing tool as recited in claim 16 wherein the downhole power unit further comprises a self-contained power source for providing electrical power.

18. The fishing tool as recited in claim 16 wherein the downhole power unit further comprises:

an electric motor including a rotor; and
a jackscrew assembly including a rotational member connected to the rotor, the rotational member operably associated with the moveable shaft to impart motion thereto.

19. The fishing tool as recited in claim 16 wherein the downhole power unit further comprises a controller that controls the operation of the moveable shaft.

20. The fishing tool as recited in claim 16 wherein the running configuration of the anchor is a radially contracted configuration, wherein the anchoring configuration of the anchor is a radially expanded configuration and wherein the anchor is operated therebetween in response to movement of the moveable shaft.

21. The fishing tool as recited in claim 16 wherein the moveable shaft of the downhole power unit is longitudinally moveable such that the fishing tool generates a longitudinal force on the well tool.

22. The fishing tool as recited in claim 16 wherein the moveable shaft of the downhole power unit is rotatably moveable such that the fishing tool generates a rotary force on the well tool.

23. The fishing tool as recited in claim 16 wherein the anchor further comprises slips that mechanically engage the wellbore in the radially expanded configuration of the anchor.

24. The fishing tool as recited in claim 16 wherein the anchor further comprises a packing assembly that substantially sealingly engages the wellbore in the radially expanded configuration of the anchor.

25. The fishing tool as recited in claim 16 wherein the anchor further comprises a spring assembly that stores energy when the anchor is in the radially expanded configuration.

26. The fishing tool as recited in claim 16 wherein the moveable shaft of the downhole power unit extends through a longitudinal bore of the anchor to the pulling tool.

27. A method for transmitting force to a well tool previously positioned in the wellbore, the method comprising the steps of:

running a downhole force generator to a target location downhole;

longitudinally securing the downhole force generator within the wellbore;

operably engaging the well tool with the downhole force generator; and

transmitting a force to the well tool with the downhole force generator.

28. The method as recited in claim 23 wherein the step of running a downhole force generator to a target location downhole further comprises running the downhole force generator to a target location downhole on a conveyance.

29. The method as recited in claim 28 wherein the step of running the downhole force generator to a target location downhole on a conveyance further comprises the step of selecting the conveyance from the group consisting of a wireline, a slickline, an electric line, a coiled tubing and a jointed tubing.

30. The method as recited in claim 27 wherein the step of longitudinally securing the downhole force generator within the wellbore further comprises operating an anchor between a radially contracted configuration and a radially expanded configuration.

31. The method as recited in claim 30 wherein the step of operating an anchor between a radially contracted configuration and a radially expanded configuration further comprises mechanically engaging slips with the wellbore.

32. The method as recited in claim 30 wherein the step of operating an anchor between a radially contracted configuration and a radially expanded configuration further comprises substantially sealingly engaging a packing assembly with the wellbore.

33. The method as recited in claim 30 wherein the step of operating an anchor between a radially contracted configuration and a radially expanded configuration further comprises operating a moveable shaft of a downhole power unit that is operably associated with the anchor.

34. The method as recited in claim 27 wherein the step of operably engaging the well tool with the downhole force generator further comprises operably engaging the well tool with a pulling tool.

35. The method as recited in claim 27 wherein the step of operably engaging the well tool with the downhole force generator further comprises operably engaging the well tool with a shifting tool.

36. The method as recited in claim 27 wherein the step of transmitting a force to the well tool with the downhole force generator further comprises operating a downhole power unit.

37. The method as recited in claim 27 wherein the step of transmitting a force to the well tool with the downhole force generator further comprises transmitting a longitudinal force to the well tool.

38. The method as recited in claim 27 wherein the step of transmitting a force to the well tool with the downhole force generator further comprises transmitting a rotary force to the well tool.

39. The method as recited in claim 27 wherein the step of transmitting a force to the well tool with the downhole force generator further comprises actuating the well tool from one operational state to another operational state.

40. The method as recited in claim 27 wherein the step of transmitting a force to the well tool with the downhole force generator further comprises dislodging the well tool.

41. The method as recited in claim 27 wherein the step of longitudinally securing the downhole force generator within the wellbore occurs prior to the step of operably engaging the well tool with the downhole force generator.

42. The method as recited in claim 27 wherein the step of longitudinally securing the downhole force generator within the wellbore occurs after the step of operably engaging the well tool with the downhole force generator.

43. A method for dislodging a well tool previously positioned in the wellbore, the method comprising the steps of:

running a fishing tool to a target location downhole;
longitudinally securing the fishing tool within the wellbore;
operably engaging the well tool with the fishing tool;
and

dislodging the well tool by applying a force to the well tool with the fishing tool.

44. The method as recited in claim 43 wherein the step of running a fishing tool to a target location downhole further comprises running the fishing tool to a target location downhole on a conveyance.

45. The method as recited in claim 44 wherein the step of running the fishing tool to a target location downhole on a conveyance further comprises the step of selecting the conveyance from the group consisting of a wireline, a slickline, an electric line, a coiled tubing and a jointed tubing.

46. The method as recited in claim 43 wherein the step of longitudinally securing the fishing tool within the wellbore further comprises operating an anchor between a radially contracted configuration and a radially expanded configuration.

47. The method as recited in claim 46 wherein the step of operating an anchor between a radially contracted configuration and a radially expanded configuration further comprises mechanically engaging slips with the wellbore.

48. The method as recited in claim 46 wherein the step of operating an anchor between a radially contracted configuration and a radially expanded configuration further comprises substantially sealingly engaging a packing assembly with the wellbore.

49. The method as recited in claim 46 wherein the step of operating an anchor between a radially contracted configuration and a radially expanded configuration further comprises operating a moveable shaft of a downhole power unit that is operably associated with the anchor.

50. The method as recited in claim 43 wherein the step of dislodging the well tool from the wellbore further comprises operating a downhole power unit.

51. The method as recited in claim 43 wherein the step of dislodging the well tool from the wellbore further comprises transmitting a longitudinal force to the well tool.

52. The method as recited in claim 43 wherein the step of dislodging the well tool from the wellbore further comprises transmitting a rotary force to the well tool.

53. The method as recited in claim 43 wherein the step of longitudinally securing the fishing tool within the wellbore occurs after the step of operably engaging the well tool with the fishing tool.

54. The method as recited in claim 43 wherein the step of longitudinally securing the fishing tool within the wellbore occurs prior to the step of operably engaging the well tool with the fishing tool.